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(51) Int Cl.<sup>6</sup> **H04N 7/16**(21) Application number: **90117047.2**(22) Date of filing: **05.09.1990**(54) **Method, system and apparatus for providing demographically targeted television commercials**

Verfahren, System und Vorrichtung zum Liefern von demographisch ausgerichteter Fernsehwerbung

Procédé, système et appareil pour fournir des émissions de télévision publicitaires visant des groupes démographiques

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## Description

The present invention relates to cable television systems and apparatus, and more particularly to the provision of different commercial messages to different demographically targeted cable television audiences. Although the invention is described in the context of cable television systems, it will be appreciated that it has application in comparable systems, such as satellite broadcasting systems and the like.

WO-A-8707807 discloses a signal substitution system used for marketing research purposes. In this system test commercials are substituted for a normal television signal according to the identified authorization of a respective test viewer receiver so that the effectiveness of the commercial can be evaluated. Therefore, this reference merely discloses broadcasting of some test commercials to predefined test viewer receivers identified according to receiver authorization for testing the effectiveness of the commercials.

Viewers of commercial television are well aware that a typical television channel contains television programs with periodic commercial message breaks. Advertisers sponsor television programs by purchasing space for their commercials during the broadcast of the program. Although different commercials are often run for the same television program in different geographic areas, there has been no way to target specific commercials to specific television viewers on a case-by-case basis.

It is an object of the invention to provide a system and a method for targeting specific commercial advertisements to demographically selected audiences.

According to the present invention this object is solved by a cable or satellite television system for broadcasting different commercial messages to different audiences, comprising:

a headend for transmitting television signals including a first television channel comprising television programs with periodic commercial message breaks and at least a second additional television channel comprising commercial messages; means for receiving said television signals; tuning means coupled to said receiving means for providing a selected channel for viewing; means for identifying authorization of said receiving means; means for determining when a commercial message break is about to occur on said first television channel; and selection means, responsive to said determining means and said authorization identifying means, for actuating the tuning means to provide a particular commercial message channel for viewing during a commercial message break wherein said means for identifying authorization of said receiving means comprise means for identifying

demographic characteristics of a television viewer on a case by case basis, and that said means for identifying authorization of said receiving means are responsive to said means for identifying said demographic characteristics of said television viewer for providing a particular commercial message transmitted from said headend based on said demographic characteristics.

Further advantageous embodiments of this system are subject matter of subclaims 2 to 14.

According to the present invention the object outlined above is also solved by a subscriber apparatus for use in receiving cable or satellite television services comprising:

means for receiving television signals including a first television channel comprising television programs with periodic commercial message breaks and at least a second additional television channel comprising commercial messages; tuning means coupled to said receiving means for providing a selected channel for viewing; means for identifying authorization of said receiving means; means for determining when a commercial message break is about to occur on said first television channel; and selection means, responsive to said determining means and said authorization identifying means for actuating the tuning means to provide a particular commercial message break, wherein said means for identifying authorization of said receiving means comprise means for identifying demographic characteristics of a television viewer on a case by case basis and said means for identifying authorization of said receiving means are responsive to said means for identifying said demographic characteristics of said television viewer for providing a particular commercial message based on said demographic characteristics.

Further advantageous embodiments of such a subscriber apparatus are subject matter of subclaims 16 to 19. Additional advantageous embodiments of the system and the subscriber apparatus outlined above are subject matter of claims 20 to 22.

According to the present invention the object is also solved by a remote control used with a cable or satellite television system or an apparatus according to one of the preceding claims, said remote control comprising selector switches for enabling a user to control various functions including channel selection wherein means for enabling a user to input demographic data to said converter are provided.

An advantageous embodiment of said remote control provides enabling means comprising a plurality of

switches for entering information indicative of the sex and age of the user.

According to the present invention the object is also a method for broadcasting different commercial messages to different television audiences, comprising the steps of:

transmitting television signals including a first channel containing television programs and periodic commercial messages and a second channel containing alternate commercial messages; identifying authorization of the television set receiving said television signals, selectively providing commercial messages from said first or second channel depending upon the authorization identification of said television set, wherein demographic characteristics of a viewer are identified on a case by case basis and that the authorization identification of said television set is responsive to said identified demographic characteristics of said viewer for providing a particular commercial message based on said demographic characteristics.

Further embodiments of this method are subject matter of subclaims 26 to 29.

The inventive system enables commercial advertisements to be matched to specific television viewers, thereby more efficiently utilizing advertising budgets. It would be further advantageous to maintain real-time records of demographic characteristics of particular television viewers and the programs they watch, for subsequent retrieval and analysis.

The present invention provides such a method and apparatus.

The present invention provides a cable or satellite television system or the like for broadcasting different commercial messages to different demographically targeted audiences. A headend transmits television signals. Means are provided for identifying demographic characteristics of a television viewer. Selection means, responsive to the identifying means, provide a particular commercial message transmitted from the headend based on the demographic characteristics.

Viewer demographic types can be determined in a variety of ways. In one approach, a user demographic key on a handheld remote control is actuated by the viewer before television channel selection is made. This demographic type is then stored in the memory of a cable or satellite television converter or the like. The converter will thereby know what demographic type is viewing a television program.

Alternate methods of determining individual viewer demographic types include household survey or diary information, known address/neighborhood locations or known ethnic locations. All of these approaches allow for demographic information to be programmed into a

converter on an individual basis during installation of a cable television converter or, by known techniques from a cable system headend that transmits data to an addressable converter.

In one embodiment of the present invention, the headend transmits a first television channel comprising television programs with periodic commercial messages, and a second television channel comprising alternate commercial messages. The selection means provide a commercial message from the first or second channel depending on the demographic characteristics of a viewer. Such characteristics might include, for example, whether the viewer is male or female, and whether the viewer is an adult or a child.

Means are provided for determining when a commercial message break is about to occur, and the selection means are responsive thereto for providing an appropriate commercial message during the break. In a preferred embodiment, the headend transmits a plurality of alternate commercial message channels for use by the selection means. Thus, for example, a television program viewed by a child can have toy commercials, while the same program viewed by an adult can have commercials for items such as automobiles, air transportation services, and the like. In a more comprehensive system, the headend can transmit a plurality of television program channels each having periodic commercial message breaks, with each television program channel having a corresponding plurality of alternate commercial message channels associated herewith.

In order to provide a return to the television program at the termination of a commercial message break, a timer can be provided that allocates a specific time slot (e.g., 15 seconds, 30 seconds, 60 seconds) for commercial messages to be received. At the termination of the time slot, the system returns to the channel containing the television program. Other means, such as commercial message break start and stop data signals, can be provided to alert the selection means to switch from the television program channel to an appropriate commercial channel, and back. Such data signals can be transmitted by the headend as "tag information" on a separate data path in a conventional manner.

In order to accommodate a plurality of television viewers watching a television together, means are provided for prioritizing the demographic characteristics of a group of viewers. The selection means is responsive to the prioritizing means for providing a commercial message based on the prioritization.

In order to provide market research functions and enable accurate billing of advertisers for commercials presented to viewers, means are provided for storing data indicative of cable or satellite services selected by viewers and commercial messages provided by the selection means for subsequent retrieval and analysis by the headend.

The present invention also provides subscriber apparatus for use in receiving cable television services or

the like. Means are provided for receiving television signals including a first television channel comprising television programs with periodic commercial message breaks and a plurality of additional television channels comprising commercial messages. Tuning means, coupled to the receiving means, provide a selected channel for viewing. Means are provided for identifying demographic characteristics of a television viewer. A determination is made as to when a commercial message break is about to occur on the first television channel, and selection means actuate the tuning means to provide a particular commercial message channel for viewing during a commercial message break, based on the viewer's demographic characteristics. Means are further provided for actuating the tuning means to return to the first television channel at the conclusion of a commercial message break.

A remote control is provided for use with a cable or satellite television converter, which comprises selector switches for enabling a user to remotely control various functions including channel selection. In accordance with the present invention, the remote control comprises means for enabling a user to input demographic data to the converter. Such means can comprise a plurality of switches for entering information indicative of the sex and age of the user.

In another embodiment, the present invention provides a cable or satellite television system or the like with the option of commercial free television programming. A headend transmits television signals, including a first television channel comprising television programs with periodic commercial messages and a second television channel comprising a non-commercial program (e.g., music, fine arts, or the like). Alternately, the second channel can provide another television program (e.g., a sports event) the viewer wants to watch intermittently during commercial breaks in the primary show being viewed. Means are provided for receiving the first channel from the headend, and determining when a commercial message break is about to occur on the first television channel. Means responsive to the determining means receive the second channel instead of the first channel during the duration of the commercial message break.

Headend apparatus is provided for broadcasting different commercial messages to different demographically targeted cable or satellite television audiences. Means are provided for transmitting a television signal containing television programs and periodic commercial message breaks on a first television channel on a cable distribution network. A library of recorded television commercials is provided for playback under the control of a system controller. Means concurrently transmit, on separate television channels on the cable distribution network, a plurality of different television commercials played back under the control of the system controller during a periodic commercial message break.

The headend apparatus can further comprise

means for storing data indicative of demographic characteristics of a cable or satellite television subscriber. Means responsive to the stored data direct subscriber apparatus serving the subscriber to tune to a designated channel, during a periodic commercial message break, for receipt of a television commercial targeted to the subscriber. Means are provided for recording data indicative of commercials transmitted on the cable distribution network from the library, and for billing advertisers based on this data.

A method is provided for broadcasting different commercial messages to demographically different television audiences. A first channel is transmitted, containing television programs and periodic commercial messages. A second transmitted channel contains alternate commercial messages. Demographic characteristics of a viewer are identified, and commercial messages are selectively provided from the first or second channel, depending upon the demographic characteristics. A plurality of channels containing alternate commercial messages may be transmitted, wherein commercial messages are provided selectively from the first, second or an alternate channel depending on the demographic characteristics identified. The demographic data can be received from the television viewer, and prioritized where a plurality of television viewers are watching a television together.

The following drawings and the detailed description disclose further features and advantages of the present invention.

Figure 1 is a block diagram of a cable television converter for the use in connection with the present invention;

Figure 2 is a plan view of a handheld remote control that a viewer can use to input demographic information;

Figure 3 is a flowchart of a software routine used by the converter of Figure 1 in connection with the present invention;

Figure 4 is a flowchart of a routine used by the converter of Figure 1 for storing command and demographic data entered by a viewer and prioritizing demographic data of a plurality of viewers watching a television program together;

Figure 5 is a block diagram of headend apparatus in accordance with the present invention;

Figure 6 is a block diagram showing an alternate embodiment of headend apparatus in accordance with the present invention; and

Figure 7 is a block diagram of a routine used by the converter of Figure 1 to retrieve stored data and transmit it to the headend.

The present invention allows the targeting of particular commercial advertisements to television viewers having particular demographic characteristics, and the subsequent retrieval of market research data identifying

the programs selected and commercials viewed by particular demographic types. The invention is disclosed in connection with a cable television system. It should be appreciated, however, that the invention is equally applicable to other television broadcast systems as will be apparent to those skilled in the art.

In accordance with the invention, a cable television converter tunes automatically to a predefined commercial channel when a commercial message break is about to occur in a television program being viewed. The predefined commercial channel contains commercial targeted to the viewer demographic type. The tuning from the program channel to the commercial channel is only minimally noticeable by the viewer. For example, the tuning can occur during the vertical blanking interval of the television program signal. The implementation of control functions during the vertical blanking interval is well known in the art, and circuitry for effecting a tuning change during the vertical blanking interval will be apparent to those skilled in the art. By enabling different converters to tune of different commercial channels, one viewer demographic type using one converter might see a commercial for automobiles while another viewer using a similar converter could see an advertisement for toys during the same commercial break.

Figure 1 illustrates, in block diagram form, a converter 10 used in connection with the present invention. An RF input signal, comprising a plurality of television program channels and commercial message channels, is input at terminal 12 from a cable system headend. The input signal is coupled, via splitter 16, to a tuner 18 that is used to tune to a particular television program channel or commercial channel under the direction of microprocessor 30. The output of tuner 18 is coupled via splitter 20 to a conventional descrambler 24, which outputs television program signals to a viewer's television set 9 (or other video appliance, such as a VCR) via terminal 14. An AM data receiver 22 receives "tag information" carried on a particular television channel and inputs the information to a microprocessor 30. FM data receiver 26 receives other information from the headend (i.e., descrambler authorization data) for input to microprocessor 30. The use of AM and FM data receivers in cable television converters for retrieving tag information and addressable data is well known.

Operational software for converter 10 is contained in ROM 32. Existing cable television converters, such as the DPS/DPVS/DPBB converters and the DP7 family of converters manufactured by the Jerrold Division of General Instrument Corporation can be upgraded to implement the present invention by interchanging the ROM chip contained in the converter with a new ROM device containing additional software.

A serial number PROM 34 in converter 10 contains a unique code identifying the converter to the headend, enabling the converter to be addressed on an individual basis. RAM 36 is the operating memory for microprocessor 30, and in accordance with the present invention

stores data indicative of demographic characteristics of a viewer or viewers using the converter at any given time. RAM 36 may also store data indicative of the television channels or other cable services selected by particular demographic types. This data can be appended with date and time information by microprocessor 30, to enable subsequent cross-referencing of channels selected by viewers to the programs shown on the channel at the time of selection.

LED display 38 outputs the television channel number to which the converter is tuned by a viewer. IR receiver 40 receives data transmitted by a handheld remote control for input to microprocessor 30. Keypad 42 enables users to input channel selection and other information to the converter directly without the use of a handheld remote control.

A remote control 120 for use with converter 10 is illustrated in Figure 2. Data are transmitted from the front end 122 of remote control 120 using an infrared or equivalent remote data path. A plurality of conventional function buttons 132 and channel selection buttons 134 are provided. In accordance with the present invention, a plurality of switches 124, 126, 128, 130 is provided to enable a user to input demographic data to converter 10. For example, switches 124 and 126 can be provided to indicate that the viewer is an adult male or female, respectively. Switches 128 and 130 can be provided to indicate that the viewer is a male or female child, respectively. Other demographic information can alternately be provided via switches 124-130, or by the provision of additional demographic switches on remote control 120. Equivalent switches can also be provided on the converter itself, as part of keypad 42. In an alternate embodiment, a user code is entered on the numeric keys of the remote control or converter to identify the demographic type of the viewer before any commands are executed. Use of a user code would expand the number of demographic types allowable, but may require additional keys to be actuated to initiate a converter response.

In operation, a viewer is required to press a demographic key on the remote control 120 (or on keypad 42) before any other key is depressed to select a channel or other converter function. The demographic data (and any other relevant data, such as data indicative of the converter function selected) are then stored in RAM 36 so that the converter knows what demographic type is watching the television associated with the converter at any given instant. This implementation provides a dynamic system where the viewer demographics can change at any time. In addition, multiple viewer data and/or demographic types can be entered and stored in the converter. A "delete" button can be provided to tell the system that a particular demographic type has left the viewing area. Prioritization of multiple viewers for use in selecting appropriate commercials is handled as described below in connection with Figure 4.

Alternate methods of identifying viewer demo-

graphic types include a passive approach, relying upon image recognition technology to determine what viewer or viewers are watching television at any given time. Demographic types can also be identified using household survey or diary information, known address/neighborhood locations or known ethnic locations. Information determined by such techniques is transferred into RAM 36 of converter 10 on an individual basis by a technician installing the converter, or via a communication from the cable system headend which addresses converter 10, via FM data receiver 26, to download the demographic data. This approach allows the headend to update and modify changes in household demographics for particular subscribers.

A headend in accordance with the present invention transmits television program channels to converter 10 together with separate channels containing commercial messages (i.e., advertisements). Information alerting the converter as to when a commercial message break is about to occur during a television program, and identifying the channels containing commercials for different demographic audiences, is transmitted by the headend in the form of tag information on the particular television program channel to which the converter is tuned. The tag information is detected by AM data receiver 22 and input to microprocessor 30, which forces tuner 18 to tune in the appropriate commercial message channel at the appropriate time. The AM tag data detected by receiver 22 is carried on the audio portion of the television program signal in a conventional manner. Alternatively, the tag data can be included in the vertical blanking interval using known techniques to alert converter 10 (via microprocessor 30) that a commercial break is about to occur.

Once converter 10 has been alerted that a commercial message break is imminent, it identifies the demographic characteristics of the current viewer from data stored in RAM 36. The converter software stored in ROM 32 then initiates an automatic channel change during a vertical blanking interval to the specific commercial message channel to which the demographic characteristics correspond. This channel is maintained for either a pre-established fixed time period (e.g., 15, 30, 45 seconds, etc.) by a timer operatively associated with microprocessor 30, or until a "return to original channel" instruction is detected by the converter through tag data transmitted by the headend. After the commercial break, the converter returns back to the original television program channel during a vertical blanking interval. Switching back and forth between television program and commercial message channels during the vertical blanking interval minimizes any visible interruption to the television viewer. The software for accomplishing the retuning of tuner 18 contains program instructions that will be apparent to those skilled in the art.

In the event separate commercial message channels are not being transmitted by the headend, or if commercials already included on the television program

channel being viewed are appropriate for the viewer, the converter maintains the current television program channel during commercial breaks and no automatic tuning to alternate commercial message channels occurs. The system of the present invention is compatible with existing systems, and enables "cable-ready" televisions viewing cable television channels directly (without a converter) to receive the commercials carried on the television program channel being viewed.

A flowchart illustrating the operation of the converter software contained in ROM 32 in a preferred embodiment is provided in Figure 3. The software routine begins at box 150, which passes control to box 152 where tag information transmitted by the system headend is read. The tag information defines if and when a commercial is about to occur, how long it will last, and which channel the converter should tune to given the viewer demographic type. If the tag information does not indicate that a commercial is about to occur, as determined at box 154, the converter stays tuned to the present television program channel, as indicated at box 158. Otherwise, control passes to box 158 where a determination is made as to whether demographic commercial options are available. If not, the converter remains tuned to the present channel as indicated at box 160.

If the converter contains data indicative of a viewer's demographic characteristics, and the headend is providing a channel for commercials targeted to such a viewer, the targeted commercials will be provided to the viewer. At box 162, the viewer demographic type stored in RAM 36 is determined. At box 164, the length of the impending commercial message break is determined from the tag information transmitted by the headend. At box 166, the converter determines which channel to tune to in order to receive the targeted commercials. The channel information is either defined by the tag information received from the headend, or has previously been stored in converter memory 36. Then, at box 168, the converter tunes to the correct channel for the commercials to be received. This is accomplished by a signal from microprocessor 30, that directs tuner 18 to tune in the appropriate commercial message channel.

Tuner 18 remains tuned to the commercial message channel for a preset length of time (i.e., the length of the commercial break) or until new tag information is received from the headend directing the converter to return to the original television program channel. The return to the original channel is effected at box 172. Control then returns to box 152 where the process repeats.

In the event that a group of television viewers are watching a television together, and more than one viewer demographic type is present, a hierarchy/priority decision is made by the converter software to determine the dominant demographic type present. The prioritization method can be based, for example, upon a weighted average of all the viewers present. Alternately, the viewer who initiated the present channel decision, or the person who makes household buying decisions can be

given priority. The flowchart of a routine for receiving data input by a viewer (including demographic data), dealing with a plurality of viewers, and storing said data for possible later retrieval and analysis is provided in Figure 4.

The routine of Figure 4 commences at box 180, and control is passed to box 182 where a determination is made as to whether a command initiated by a viewer is being input to the converter. Once an incoming command is detected (e.g., from a viewer's remote control), control passes to box 184 where data indicative of selections made by a viewer, including demographic data pertaining to the viewer(s), are received. At box 186, a determination is made as to whether demographic data were received for more than one viewer. If so, the highest priority viewer is identified at box 188. The viewer demographic type of the highest priority viewer is stored in RAM 36, as indicated at box 190. Then, at box 192, the actual command (e.g., change of channel) entered by the viewer is executed. Control then returns to box 182 where the process repeats.

In the event the cable television system operator wants to provide market research data to advertisers concerning, e.g., demographic information, channels/programs viewed, pay-per-view purchases, etc., RAM 36 will also store cumulative data indicative of the selections made by users via the remote control or converter keyboard. As indicated at box 190, microprocessor 30 will append this data with the date and time of the selections so that the actual programs or other services selected can be identified. The date and time information can be received by microprocessor 30 from the headend via FM data receiver 26. Information concerning other converter functions, such as the position of A/V switches for bypassing the converter or viewing off-air programs, can also be determined and stored. A routine for the subsequent transmission of this market research data to the headend is shown in Figure 7.

The routine of Figure 7 commences at box 200, and at box 202 a determination is made as to whether the converter 10 (Figure 1) has received a data retrieval tag instruction from the headend. Such an instruction would be sent down the cable and received by FM data receiver 26. Upon recognition of a data retrieval tag in the FM data stream addressed to the particular converter, microprocessor 30 determines whether any pertinent data are stored in RAM 36, as indicated at box 204. If not, control returns to box 202 until a data retrieval tag instruction is received and relevant data are found in RAM 36.

If relevant market research data have been stored in RAM 36, control passes from box 204 to box 206 where the data are retrieved from RAM 36. As indicated at box 208, the data are then transmitted to the headend via return path 44, which may be any conventional return path well known in the art. For example, if a telephone return path is used, return path 44 will include a modem to modulate the data for transmission over a telephone

line. In a two-way cable system, an RF return path may be used. At box 210, a determination is made as to whether all of the pertinent market research data have been transmitted to the headend and whether the transmission has been verified. If not, the data transmission repeats until it is complete. At box 212, the accumulated market research data are cleared from RAM 36, although the current viewer demographic data will remain so that a user will not have to re-enter this information after the market research data have been retrieved. Control then returns to box 202 to await the next request by the headend for the retrieval of market research data from the converter.

One embodiment of a cable television system headend that can be used to implement the present invention is shown in block diagram form in Figure 5. The components for handling commercial message sequencing and insertion are depicted in box 50. In this embodiment, the cable system operator, who controls the headend, is provided with the capability to insert commercials in the commercial break portions of programs carried on the main television program channel, and also for providing a plurality of alternate commercial channels targeted to different demographically defined audiences.

A system controller 58, which comprises a computer such as a personal computer or mini computer, provides overall control of a commercial inserter 60, commercial sources 62a-n, and a commercial interface matrix/controller 64. Controller 58 also provides billing and traffic data to a billing and traffic computer 56 that is shared with other conventional headend components (not shown) for billing subscribers and advertisers, and managing the cable television services provided.

Commercial inserter 60 receives commercials from one or more commercial sources 62a-n which may, for example, comprise VCRs, videodisc players, or the like, containing recorded commercial messages. The commercial inserter can serve a plurality of television program channels, each fed by a respective program source 52a-n. Each program source carries television programs having periodic commercial message breaks. Commercials are inserted during the commercial message breaks by commercial inserter 60, and output on the same television channel that carries the program source via a scrambler/encoder 66a and television modulator 68a for each television program channel. The scrambler/encoder scrambles premium program signals as necessary, and encodes the program signal with the tag information necessary to identify the commencement of a commercial break, etc. The channel signal output from television modulator 68a is coupled to the cable television distribution system at terminal 74 via a coupler 72, in a conventional manner.

Commercial interface matrix/controller 64 enables the cable system operator to provide a plurality of alternate commercial message channels, each of which is scrambled and encoded as necessary by scrambler/encoders 66b-n, which in turn output the commercial mes-

sage channels to television modulators 68b-n. Each television modulator outputs the commercial messages input to it on a different channel. The channels are coupled to the cable television distribution network via couplers 72 for output on terminal 74.

The individual commercials contained in an alternate commercial message channel are retrieved by commercial interface matrix/controller 64 from commercial sources 62a-n. Where, for example, an alternate commercial message channel is provided for children, commercials for various toys can be retrieved by controller 64 from commercial sources 62a-n.

System controller 58 provides overall control of the headend apparatus. For example, it controls the state of commercial inserter 60 to select between a television program from program source 52a and a commercial message from commercial sources 62a-n. Commercials from sources 62a-n are available on a time shared basis, under the control of software contained in the system controller. In this manner, for example, the same commercial can be provided on the main television program channel (via commercial inserter 60) and on an alternate commercial message channel (via commercial interface matrix/controller 64) at different time slots within the same commercial break. For example, the same commercial can be run on one channel during the first 15 seconds of a 45 second commercial break, and on another channel during the last 15 seconds of the same commercial break. The ordering of various different commercials within a commercial break, and the selection of those commercials is ultimately controlled by system controller 58 in accordance with sequencing rules established by the cable system operator.

As noted above, tag information necessary, e.g., for the converter to determine that a commercial break is about to occur on a given channel, is "encoded" on television channels via scrambler encoders 66a-n. This information is included either as AM data in the audio portion of the television signal, or as vertical blanking interval data. Specific tag data and timing of such data are relayed to scrambler/encoders 66a-n via system controller 58. The tag information can be encoded with or without signal scrambling.

An FM data modulator 70 is provided to enable the headend to download information, such as demographic information, to subscriber converters. This information can be transmitted on an individual basis where it is addressed to a particular converter, globally, or by groups of converters assigned to subscribers having similar demographic characteristics.

Billing and traffic computer 56 allows for accurate commercial tracking and advertiser billing. This computer, through a clock in system controller 58, records when various commercials were run, with data indicative of the channel on which each commercial was run and for how long. Feedback to advertisers can also be provided on who and how many people viewed a particular commercial, through the use of an optional return

path 44 provided in converter 10 (see Figure 1). Optional return path 44 comprises an output from microprocessor 30 that communicates with the headend via the cable television network (where a two-way system is provided) or on another return path, such as a telephone line. Return paths for providing two-way communication between cable television headends and subscriber converters are well known in the art.

Figure 6 illustrates an alternate headend embodiment, wherein commercial interface matrix/controller 64 is eliminated. A plurality of television program channels 54 are coupled, via a coupler 72, for output on the cable television distribution network at terminal 74. The television program channels contain television programs and periodic commercial messages. Alternate commercial messages are provided on a plurality of commercial message channels that are also coupled to the cable television distribution network. Each alternate commercial message channel receives commercials from an associated commercial player 80, 82, 84, 86 controlled by system controller 58. The commercial players can comprise, for example, video disc players equipped with interchangeable video discs each containing a plurality of commercials. Each player can retrieve and play back any of the commercials from a video disc on a random access basis. The system operator programs a set of commercials for playback on each commercial message channel in any order desired. In practice, the system operator will create sets of commercials to fill commercial breaks of different time periods and grouped to target different demographic audiences.

Television signals containing the commercials are output from each player to scrambler/encoders 90, 92, 94, 96, respectively. The scrambled and/or encoded commercial signals are input to television modulators 100, 102, 104, 106, respectively, where the commercials from each player are output on a different television channel. These television channels form the alternate commercial message channels retrieved by subscriber converters as described above. The commercial message channels are coupled to the cable television distribution network by couplers 72.

In another embodiment of the present invention, a "commercial killer" option can be provided. In this embodiment, one of players 80, 82, 84, 86 will play a non-commercial program (e.g., music, fine arts, etc.) instead of commercials. A subscriber converter can be programmed to tune to the non-commercial channel during all commercial breaks, and then return to the regular television program channel upon the completion of each commercial break. With this feature, subscribers can eliminate all commercial messages from their television viewing. Alternately, a subscriber converter can be programmed to tune to another program channel (selected by the viewer) during commercial breaks occurring on the primary channel being viewed. Thus, for example, a viewer can watch portions of a second sports event during the commercial breaks in an event of primary in-



terest.

Demographic programming is also available using the apparatus of the present invention, allowing total program material (including programs and commercials) to be automatically selected by the converter based on a viewer's demographics. A viewer would tune to a certain channel number, and all programming for the viewer would be provided by the converter automatically tuning to program and commercial channels according to demographics or pre-established viewer preferences.

It will now be appreciated that the present invention provides a system, apparatus, and method for broadcasting different commercial messages to different demographically targeted audiences. Although the invention has been described in connection with various preferred embodiments, those skilled in the art will recognize that various modifications may be made thereto. For example, the invention is not limited to use in a cable television system, and can be utilized in connection with other television transmission schemes. It is intended that the following claim language be read in its broad sense to cover all such equivalent schemes.

#### Claims

1. A cable or satellite television system for broadcasting different commercial messages to different audiences, comprising:

a headend for transmitting television signals including a first television channel comprising television programs with periodic commercial message breaks and at least a second additional television channel comprising commercial messages;

means for receiving (10) said television signals; tuning means (18) coupled to said receiving means for providing a selected channel for viewing;

means (30, 36) for identifying authorization of said receiving means;

means (22, 30) for determining when a commercial message break is about to occur on said first television channel; and selection means (30, 32), responsive to said determining means (22, 30) and said authorization identifying means (30, 36), for actuating the tuning means (18) to provide a particular commercial message channel for viewing during a commercial message break

characterized in that,

said means (30, 36) for identifying authorization of said receiving means (10) comprise means (36, 40, 124, 126, 128, 130, 42) for identifying demographic characteristics of a television viewer on a case by case basis, and that

said means (30,36) for identifying authorization of said receiving means (10) are responsive to said means (36, 40, 124, 126, 128, 130, 42) for identifying said demographic characteristics of said television viewer for providing a particular commercial message transmitted from said headend based on said demographic characteristics.

2. A system in accordance with claim 1 wherein said means for identifying said demographic characteristics resides in a cable or satellite television converter (10) and comprises means for receiving (40; 42) and storing (36) data indicative of said demographic characteristics.
3. A system in accordance with claim 1 or 2 further comprising: remote control means (120) for enabling a viewer to transmit demographic data to said means for identifying said demographic data.
4. A system in accordance with claim 2 wherein said data are received from the headend.
5. A system in accordance with one of the preceding claims wherein said headend transmits a first television channel comprising television programs with periodic commercial messages, and a second television channel comprising alternate commercial messages, wherein said selection means (30, 32) provides a commercial message from said first or second channel depending on said demographic characteristics.
6. A system in accordance with one of the preceding claims wherein said headend transmits a plurality of alternate commercial message channels for use by said selection means (30, 32) in providing commercial messages to demographically targeted audiences.
7. A system in accordance with claim 6 wherein said headend transmits a plurality of television program channels each having periodic commercial message breaks, and wherein each of said television program channels has a corresponding plurality of alternate commercial message channels associated therewith.
8. A system in accordance with one of claims 1 to 7 wherein said selection means (30, 32) includes a timer (30) to provide for a return to said first television channel a predetermined time period after a commercial message break has commenced, in the event a commercial message from the second channel was provided during the break.

9. A system in accordance with one of claims 1 to 7 further comprising:  
 means (22, 30) for determining when a commercial message break is about to end and for returning to said first television channel at the end of said break in the event said selection means (30, 32) has provided a commercial message from the second channel during the break.
10. A system in accordance with one of the preceding claims further comprising:  
 means (30) for prioritizing the demographic characteristics of a plurality of television viewers watching a television together;  
 wherein said means (30, 36) for identifying authorization of said receiving means (10) is responsive to said prioritizing means (30) for providing a commercial message based on said prioritization.
11. A system in accordance with one of the preceding claims further comprising:  
 means (30, 36) for storing data indicative of commercial messages provided by said selection means (30, 32) for subsequent retrieval and analysis by said headend.
12. A system according to claim 1, wherein said headend is transmitting said television signals on a cable distribution network;  
 a library of recorded television commercials for playback under the control of a system controller is provided;  
 said headend is concurrently transmitting, on separate television channels on said cable distribution network, a plurality of different television commercials played back under the control of said system controller during a periodic commercial message break.
13. A system according to claim 12, wherein said means (30, 36) for identifying comprises  
 means (36) for storing data indicative of demographic characteristics of a cable or satellite television subscriber and said selection means (30, 32) comprises means responsive to data stored in said storing means (36), for directing a subscriber apparatus serving said subscriber to tune to a designated channel during a periodic commercial message break for receipt of a television commercial targeted to said subscriber.
14. A system in accordance with claim 12 or 13 further comprising:  
 means (30, 36) for recording data indicative of commercials transmitted on said cable distribution network from said library; and means for billing advertisers based on said data.
15. Subscriber apparatus for use in receiving cable or satellite television services, comprising:  
 means for receiving (10) television signals including a first television channel comprising television programs with periodic commercial message breaks and at least a second additional television channel comprising commercial messages;  
 tuning means (18) comprised by said receiving means (10) for providing a selected channel for viewing;  
 means (30, 36) for identifying authorization of said receiving means;  
 means (22, 30) for determining when a commercial message break is about to occur on said first television channel; and  
 selection means (30, 32), responsive to said determining means (22, 30) and said authorization identifying means (30, 36), for actuating the tuning means (18) to provide a particular commercial message channel for viewing during a commercial message break, characterized in that said means (30, 36) for identifying authorization of said receiving (10) means comprise means (36; 40, 124, 126, 128, 130; 42) for identifying demographic characteristics of a television viewer on a case by case basis and said means (30, 36) for identifying authorization of said receiving means (10) are responsive to said means (36; 40, 124, 126, 128, 130; 42) for identifying said demographic characteristics of said television viewer for providing a particular commercial message based on said demographic characteristics.
16. Apparatus in accordance with claim 15 further comprising:  
 means (120, 124, 126, 128, 130; 42) for enabling a viewer to input demographic data to said means for identifying said demographic data.
17. Apparatus in accordance with claim 15 or 16 further comprising:  
 means (22, 30) for actuating said tuning means (18) to return to said first television channel at the conclusion of a commercial message break.
18. Apparatus in accordance with claim 17 wherein said actuating means comprises: a timer (30) for actuating the return to said first television channel a predetermined time period after a commercial message break has commenced.
19. Apparatus in accordance with one of claim 15 to 18

further comprising:

means (30) for prioritizing the demographic characteristics of a plurality of television viewers watching a television together; wherein said means (30, 36) for identifying authorization of said receiving means (18) is responsive to said prioritizing means (30) to provide a particular commercial message channel based on said prioritization.

20. A system or apparatus according to one of claims 1 to 19

characterized in that an apparatus for providing market research data concerning viewers and their utilization of cable or satellite services is provided which comprises data input means (120, 124, 126, 128, 130, 42) enabling a viewer to identify demographic characteristics and select television programs for viewing; a converter (10) for receiving cable or satellite television signals from a headend, and responsive to said data input means (120, 124, 126, 128, 130, 42) for providing said signals to a subscriber's television for viewing upon entry of demographic and program selection data; means (36) for storing demographic and program selection data entered into said data input means; and means (30) for retrieving the stored data and transmitting it to said headend.

21. A system in accordance with claim 20 further comprising: means (30) for appending the stored data with information indicative of the date and time the data were entered into said data input means.

22. A system in accordance with claim 20 or 21 wherein said data input means comprises a remote control (120) for operating said converter (10).

23. A cable or satellite television system or an apparatus according to one of the preceding claims, including a remote control (120) comprising selector switches (132, 134) for enabling a user to control various functions including channel selection characterized in that means (124, 126, 128, 130) for enabling a user to input demographic data to said converter (10) are provided.

24. A system or an apparatus according to claim 23 wherein said enabling means comprises a plurality of switches (124, 126, 128, 130) for entering information indicative of the sex and age of the user.

25. A method for broadcasting different commercial messages to different television audiences, comprising the steps of:

transmitting television signals including a first channel containing television programs and periodic commercial messages and a second channel containing alternate commercial messages; identifying authorization of the television set receiving said television signals, selectively providing commercial messages from said first or second channel depending upon the authorization identification of said television set, characterized in that demographic characteristics of a viewer are identified on a case by case basis and that the authorization identification of said television set is responsive to said identified demographic characteristics of said viewer for providing a particular commercial message based on said demographic characteristics.

26. A method in accordance with claim 25 comprising the further steps of:

tuning to said first channel to enable the viewing of said television programs; tuning to said second channel during a commercial break on said first channel in the event commercial messages from said second channel are to be provided; and tuning to said first channel at the completion of said commercial break.

27. A method in accordance with claim 25 or 26 wherein a plurality of channels containing alternate commercial messages are transmitted, and commercial messages are provided selectively from said first, second or an alternate channel depending on the demographic characteristics identified.

28. A method in accordance with one of claims 25 to 27 wherein identifying said demographic characteristics of said viewer comprises the step of receiving demographic data from the viewer.

29. A method in accordance with one of claims 25 to 28 comprising the further step of: prioritizing the demographic characteristics of a plurality of television viewers watching a television together; wherein the provision of commercial messages is based on said prioritization.

#### Patentanprüche

1. Ein Kabel- oder Satellitenfernsehsystem zur Sendung unterschiedlicher kommerzieller Mitteilungen an unterschiedliche Zuschauergruppen, umfassend:

- eine Kopfstelle zum Übertragen von Fernsehsignalen, die einen ersten Fernsehkanal enthalten, der Fernsehprogramme mit periodischen Unterbrechungen für kommerzielle Mitteilungen umfaßt, und mindestens einen zweiten zusätzlichen Fernsehkanal, der kommerzielle Mitteilungen umfaßt;
  - Mittel (10) zum Empfangen der Fernsehsignale;
  - Abstimmmittel (18), die an die Empfangsmittel gekoppelt sind, zum Bereitstellen eines ausgewählten Kanals zum Anschauen;
  - Mittel (30, 36) zur Identifizierung der Berechtigung der Empfangsmittel;
  - Mittel (22, 30) zum Ermitteln, wann eine Unterbrechung für eine kommerzielle Mitteilung im Begriff ist, auf dem ersten Fernsehkanal zu erscheinen; und
  - Selektionsmittel (30, 32), die auf die Ermittlungsmittel (22, 30) und die berechtigungsidifizierenden Mittel (30, 36) ansprechen, zum Ingangsetzen der Abstimmmittel (18), damit ein besonderer Kanal für kommerzielle Mitteilungen zum Anschauen während einer Unterbrechung für kommerzielle Mitteilungen bereitgestellt wird, dadurch gekennzeichnet, daß die Mittel (30, 36) zur Identifizierung der Berechtigung der Empfangsmittel (10) Mittel (36; 40, 124, 126, 128, 130; 42) zur Identifizierung demographischer Charakteristika eines Fernsehzuschauers auf einer Fall-zu-Fall-Basis umfassen, und daß die Mittel (30, 36) zur Identifizierung der Berechtigung der Empfangsmittel (10) auf die Mittel (36; 40, 124, 126, 128, 130; 42) zur Identifizierung der demographischen Charakteristika des Fernsehzuschauers ansprechen, um eine besondere kommerzielle Mitteilung zur Verfügung zu stellen, die von der Kopfstelle auf den demographischen Charakteristika basierend übertragen wird.
2. System nach Anspruch 1, wobei die Mittel zur Identifizierung der demographischen Charakteristika sich in einem Kabel- oder Satellitenfernsehkonzert (10) befinden und Mittel zum Empfangen (40, 42) und Speichern (36) von Daten, die für die demographischen Charakteristika bezeichnend sind, umfassen.
  3. System nach Anspruch 1 oder 2 ferner umfassend: Fernbedienungsmittel (120), um einem Zuschauer zu ermöglichen, demographische Daten an die Mittel zur Identifizierung der demographischen Daten zu übertragen.
  4. System nach Anspruch 2, wobei die Daten von der

Kopfstelle her empfangen werden.

5. System nach einem der voranstehenden Ansprüche, wobei die Kopfstelle einen ersten Fernsehkanal, der Fernsehprogramme mit periodischen kommerziellen Mitteilungen aufweist, und einen zweiten Fernsehkanal, der wechselnde kommerzielle Mitteilungen aufweist, überträgt, wobei die Selektionsmittel (30, 32) eine kommerzielle Mitteilung aus dem ersten oder zweiten Kanal, abhängig von den demographischen Charakteristika, bereitstellen.
6. System nach einem der voranstehenden Ansprüche, wobei die Kopfstelle eine Vielzahl von Kanälen mit wechselnden kommerziellen Mitteilungen zur Verwendung durch die Selektionsmittel (30, 32) beim Bereitstellen kommerzieller Mitteilungen an demographisch ausgewählte Zuschauergruppen überträgt.
7. System nach Anspruch 6, wobei die Kopfstelle eine Vielzahl von Fernsehprogrammkanälen überträgt, von denen jeder periodische Unterbrechungen für kommerzielle Mitteilungen aufweist, und wobei mit jedem der Fernsehprogrammkanäle eine entsprechende Vielzahl von Kanälen mit wechselnden kommerziellen Mitteilungen verbunden ist.
8. System nach einem der Ansprüche 1 bis 7, wobei die Selektionsmittel (30, 32) einen Zeitgeber (30) aufweisen, um für eine Rückkehr zu dem ersten Fernsehkanal in einer vorbestimmten Zeitspanne nachdem eine Unterbrechung für kommerzielle Mitteilungen begonnen hat, zu sorgen, in dem Fall, daß eine kommerzielle Mitteilung aus dem zweiten Kanal während der Unterbrechung bereitgestellt wurde.
9. System nach einem der Ansprüche 1 bis 7 weiterhin umfassend:  
Mittel (22, 30) zur Ermittlung, wann eine Unterbrechung für kommerzielle Mitteilungen im Begriff ist, zu Ende zu gehen, und zum Zurückkehren zu dem ersten Fernsehkanal am Ende der Unterbrechung im Falle, daß das Selektionsmittel (30, 32) eine kommerzielle Mitteilung aus dem zweiten Kanal während der Unterbrechung zur Verfügung gestellt hat.
10. System nach einem der voranstehenden Ansprüche, weiterhin umfassend:

Mittel (30) zum Setzen von Prioritäten in den demographischen Charakteristika einer Vielzahl von Fernsehzuschauern, die gemeinsam fernsehen;  
wobei die Mittel (30, 36) zur Identifizierung der Berechtigung der Empfangsmittel (10) auf die

prioritätssetzenden Mittel (30) ansprechen, um eine kommerzielle Mitteilung basierend auf der Prioritätssetzung zur Verfügung zu stellen.

11. System nach einem der voranstehenden Ansprüche weiterhin umfassend:

Mittel (30, 36) zur Speicherung von Daten, die für kommerzielle Mitteilungen, welche durch die Selektionsmittel (30, 32) bereitgestellt sind, bezeichnend sind, zur nachfolgenden Rückgewinnung und Analyse durch die Kopfstelle.

12. System nach Anspruch 1, wobei die Kopfstelle die Fernsehsignale auf ein Kabelverteilnetz überträgt;

eine Bibliothek von aufgezeichneten Fernsehwerbesendungen zum Abspielen unter der Kontrolle eines Systemcontrollers bereitstellt ist;

die Kopfstelle gleichzeitig, auf getrennten Fernsehkanälen auf dem Kabelverteilnetz, eine Vielzahl von unterschiedlichen Fernsehwerbesendungen überträgt, die unter der Kontrolle des Systemcontrollers während einer periodischen Unterbrechung für kommerzielle Mitteilungen abgespielt werden.

13. System nach Anspruch 12, wobei die Mittel (30, 36) zur Identifizierung Mittel (36) zum Speichern von Daten, die für demographische Charakteristika eines Kabeloder Satellitenfernsehsabkribenten bezeichnend sind, umfassen, und die Selektionsmittel (30, 32) Mittel umfassen, die auf Daten, die in den Speichermitteln (36) gespeichert sind, ansprechen, zum Führen einer Subskribentenvorrichtung, die dem Subskribenten dient, während einer periodischen Unterbrechung für kommerzielle Mitteilungen auf einen bestimmten Kanal zum Empfang einer Fernsehwerbesendung, die auf den Subskribenten ausgerichtet ist, abzustimmen.

14. System nach Anspruch 12 oder 13, weiterhin umfassend: Mittel (30, 36) zum Aufzeichnen von Daten, die für Werbesendungen, die auf das Kabelverteilnetz von der Bibliothek her übertragen werden, bezeichnend sind; und Mittel zur Rechenaussstellung an Werber auf der Grundlage der Daten.

15. Eine Subskribentenvorrichtung zum Gebrauch beim Empfangen von Kabel- oder Satellitenfernsehdienstleistungen, umfassend:

Mittel zum Empfangen (10) von Fernsehsignalen, die einen ersten Fernsehkanal aufweisen, der Fernsehprogramme mit periodischen Unterbrechungen für kommerzielle Mitteilungen

umfaßt, und mindestens einen zweiten zusätzlichen Fernsehkanal, der kommerzielle Mitteilungen umfaßt;

Abstimmittel (18), die von dem Empfangsmittel (10) umfaßt sind, zur Bereitstellung eines ausgewählten Kanals zum Anschauen;

Mittel (30, 35) zur Identifizierung der Berechtigung der Empfangsmittel;

Mittel (22, 30) zur Ermittlung, wann eine Unterbrechung für kommerzielle Mitteilungen im Begriff ist, in dem ersten Fernsehkanal zu erscheinen; und

Selektionsmittel (30, 32), die auf die Ermittlungsmittel (22, 30) und die berechtigungsidentifizierenden Mittel (30, 35) ansprechen, zum Ingangsetzen der Abstimmittel (18), um einen bestimmten Kanal für kommerzielle Mitteilungen zum Anschauen während einer Unterbrechung für kommerzielle Mitteilungen zur Verfügung zu stellen,

dadurch gekennzeichnet, daß die Mittel (30, 36) zur Identifizierung der Berechtigung der Empfangsmittel (10) Mittel (36; 40, 124, 126, 128, 130; 42) zur Identifizierung demographischer Charakteristika eines Fernsehzuschauers auf Fall-zu-Fall-Basis umfassen und

die Mittel (30, 36) zur Identifizierung der Berechtigung der Empfangsmittel (10) auf die Mittel (36; 40, 124, 126, 128, 130; 42) zur Identifizierung der demographischen Charakteristika des Fernsehzuschauers ansprechen, zur Bereitstellung einer besonderen kommerziellen Mitteilung, die auf den demographischen Charakteristika beruht.

16. Vorrichtung nach Anspruch 15, weiterhin umfassend: Mittel (120, 124, 126, 128, 130; 42), die es einem Zuschauer ermöglichen, demographische Daten in die Mittel zur Identifizierung der demographischen Daten einzugeben.

17. Vorrichtung nach Anspruch 15 oder 16, weiterhin umfassend:

Mittel (22, 30) zum Ingangsetzen der Abstimmittel (18), um zu dem ersten Fernsehkanal am Abschluß einer Unterbrechung für kommerzielle Mitteilungen zurückzukehren.

18. Vorrichtung nach Anspruch 17, wobei die Ingangsetzungsmittel umfassen:

einen Zeitgeber (30) zum Auslösen der Rückkehr zu dem ersten Fernsehkanal in einer vorbestimmten Zeitspanne nachdem eine Unterbrechung für kommerzielle Mitteilungen begonnen hat.

19. Vorrichtung nach einem der Ansprüche 15 bis 18, weiterhin umfassend:

- Mittel (30) zum Setzen von Prioritäten in den demographischen Charakteristika einer Vielzahl von Fernsehzuschauern, die zusammen fernschauen; wobei die Mittel (30, 36) zur Identifizierung der Berechtigung der Empfangsvorrichtung (10) auf die prioritätsetzenden Mittel (30) ansprechen, um einen besonderen Kanal für kommerzielle Mitteilungen basierend auf der Setzung der Prioritäten zur Verfügung zu stellen.
20. System oder Vorrichtung nach einem der Ansprüche 1 bis 19, dadurch gekennzeichnet, daß eine Vorrichtung zum Bereitstellen von Marktforschungsdaten, die die Zuschauer und ihren Gebrauch von Kabel- oder Satellitendienstleistungen betreffen, vorhanden ist, welche Dateneingabemittel (120, 124, 126, 128, 130; 42) umfaßt, die es einem Zuschauer erlauben, demographische Charakteristika zu identifizieren und Fernsehprogramme zum Anschauen auszuwählen;
- daß ein Konverter (10) zum Empfangen von Kabel- oder Satellitenfernsehsignalen von einer Kopfstelle und der auf die Dateneingabemittel (120, 124, 126, 128, 130; 42) zum Bereitstellen der Signale an den Fernseher eines Subskribenten zum Anschauen bei Eingabe von demographischen und Programmselektionsdaten anspricht, vorhanden ist; daß Mittel (36) zum Speichern von demographischen und Programmselektionsdaten, welche in die Dateneingabemittel eingegeben werden, vorhanden sind; und daß Mittel (30) zum Zurückgewinnen der gespeicherten Daten und zu ihrem Übertragen an die Kopfstelle vorhanden sind.
21. System nach Anspruch 20, weiterhin umfassend: Mittel (30) zum Hinzufügen von Informationen zu den gespeicherten Daten, die für das Datum und die Zeit, wann die Daten in die Dateneingabemittel eingegeben wurden, bezeichnend sind.
22. System nach Anspruch 20 oder 21, wobei die Dateneingabemittel eine Fernbedienung (120) zur Bedienung des Konverters (10) umfassen.
23. Kabel- oder Satellitenfernsehsystem oder Vorrichtung nach einem der voranstehenden Ansprüche umfassend, eine Fernbedienung (120), die Wählschalter (132, 134) aufweist, um es einem Benutzer zu ermöglichen, verschiedene Funktionen einschließlich Kanalauswahl zu steuern, dadurch gekennzeichnet, daß Mittel (124, 126, 128, 130) vorhanden sind, die es einem Benutzer erlauben, demographische Daten in den Konverter (10) einzugeben.
24. System oder Vorrichtung nach Anspruch 23, wobei die Mittel zum Ermöglichen von Eingaben eine Vielzahl von Schaltern (124, 126, 128, 130) zur Eingabe von Informationen bezüglich Geschlecht und Alter des Benutzers umfassen.
25. Ein Verfahren zum Übertragen unterschiedlicher kommerzieller Mitteilungen an unterschiedliche Fernsehzuschauergruppen, umfassend die Schritte:
- Übertragen von Fernsehsignalen, die einen ersten Kanal aufweisen, der Fernsehprogramme und periodische kommerzielle Mitteilungen umfaßt, und einen zweiten Kanal, der wechselnde kommerzielle Mitteilungen umfaßt; Identifizierung der Berechtigung der Fernsehanlage, die die Fernsehsignale empfängt, selektives Bereitstellen kommerzieller Mitteilungen aus dem ersten oder zweiten Kanal, abhängig von der Berechtigungsidentifizierung der Fernsehanlage, dadurch gekennzeichnet, daß die demographischen Charakteristika eines Zuschauers auf einer Fall-zu-Fall-Basis identifiziert werden und daß die Berechtigungsidentifizierung der Fernsehanlage auf die identifizierten demographischen Charakteristika des Zuschauers anspricht, um eine bestimmte kommerzielle Mitteilung, die auf den demographischen Charakteristika beruht, bereitzustellen.
26. Verfahren nach Anspruch 25, das die Schritte umfaßt: Abstimmen auf den ersten Kanal, um das Anschauen der Fernsehprogramme zu ermöglichen; Abstimmen auf den zweiten Kanal während einer kommerziellen Unterbrechung auf dem ersten Kanal im Falle, daß kommerzielle Mitteilungen von dem zweiten Kanal bereitgestellt werden; und Abstimmen auf den ersten Kanal nach Beendigung der kommerziellen Unterbrechung.
27. Verfahren nach Anspruch 25 oder 26, wobei eine Vielzahl von Kanälen, die wechselnde kommerzielle Mitteilungen umfassen, übertragen werden, und kommerzielle Mitteilungen selektiv von dem ersten, zweiten oder einem anderen Kanal abhängig von den identifizierten demographischen Charakteristika bereitgestellt sind.
28. Verfahren nach einem der Ansprüche 25 bis 27, wobei das Identifizieren der demographischen Charakteristika des Zuschauers den Schritt des Empfangens von demographischen Daten vom Zuschauer umfaßt.

29. Verfahren nach einem der Ansprüche 25 bis 26, das den Schritt umfaßt:

Setzen von Prioritäten in den demographischen Charakteristika einer Vielzahl von Fernsehzuschauern, die gemeinsam fernsehen, wobei die Bereitstellung von kommerziellen Mitteilungen auf dem Setzen der Prioritäten beruht.

#### Revendications

1. Système de télévision par câble ou satellite pour émettre des messages publicitaires différents à des téléspectateurs différents, comprenant :

une station de tête pour transmettre des signaux de télévision qui contiennent un premier canal de télévision comprenant des programmes de télévision avec des interruptions périodiques de messages publicitaires et au moins un deuxième canal de télévision supplémentaire comprenant des messages publicitaires, des moyens de réception (10) desdits signaux de télévision, des moyens de syntonisation (18) associés auxdits moyens de réception pour fournir un canal sélectionné afin de le visualiser, des moyens (30, 36) pour identifier l'autorisation desdits moyens de réception, des moyens (22, 30) pour déterminer quand une interruption de messages publicitaires se produira sur ledit premier canal de télévision, et des moyens de sélection (30, 32), en réponse desdits moyens de détermination (22, 30) et desdits moyens (30, 36) identifiant l'autorisation, pour actionner les moyens de syntonisation (18) afin de fournir un canal particulier de messages publicitaires pour une visualisation durant une interruption de messages publicitaires, caractérisé en ce que lesdits moyens (30, 36) pour identifier l'autorisation desdits moyens de réception (10) comprennent des moyens (36, 40, 124, 126, 128, 130, 42) pour identifier au cas par cas des caractéristiques démographiques d'un téléspectateur, et en ce que lesdits moyens (30, 36) pour identifier l'autorisation desdits moyens de réception (10) sont en réponse desdits moyens (36, 40, 124, 126, 128, 130, 42) pour identifier lesdites caractéristiques démographiques dudit téléspectateur afin de fournir un message publicitaire particulier transmis à partir de ladite station de tête et basé sur lesdites caractéristiques démographiques.

2. Système suivant la revendication 1, dans lequel les-

dits moyens pour identifier lesdites caractéristiques démographiques résident dans un convertisseur (10) de télévision par câble ou satellite et comprennent des moyens de réception (40, 42) et d'emmagasinage (36) de données qui sont des indicateurs desdites caractéristiques démographiques.

3. Système suivant la revendication 1 ou 2, comprenant en plus une télécommande (120) pour permettre à un spectateur de transmettre des données démographiques auxdits moyens d'identification desdites données démographiques.

4. Système suivant la revendication 2, dans lequel lesdites données sont reçues à partir de la station de tête.

5. Système suivant l'une des revendications précédentes, dans lequel ladite station de tête transmet un premier canal de télévision comprenant des programmes de télévision avec des messages publicitaires périodiques, et un deuxième canal de télévision comprenant des messages publicitaires alternatifs, dans lequel lesdits moyens de sélection (30, 32) fournissent un message publicitaire à partir dudit premier ou deuxième canal dépendant desdites caractéristiques démographiques.

6. Système suivant l'une des revendications précédentes, dans lequel ladite station de tête transmet plusieurs canaux de messages publicitaires alternatifs à utiliser par lesdits moyens de sélection (30, 32) en fournissant des messages publicitaires à des spectateurs visés de façon démographique.

7. Système suivant la revendication 6, dans lequel ladite station de tête transmet plusieurs canaux de programmes de télévision comportant chacun des interruptions périodiques de messages publicitaires, et dans lequel chacun desdits canaux de programmes de télévision comprend un nombre correspondant de canaux de messages publicitaires alternatifs associés avec ceux-ci.

8. Système suivant l'une des revendications 1 à 7, dans lequel lesdits moyens de sélection (30, 32) comprennent un compteur de temps (30) pour fournir un retour audit premier canal de télévision à une période de temps prédéterminée après qu'une interruption de messages publicitaires ait commencé, dans le cas où un message publicitaire du deuxième canal était fourni durant l'interruption.

9. Système suivant l'une des revendications 1 à 7, comprenant en plus des moyens (22, 30) pour déterminer quand une interruption de messages publicitaires se terminera environ et pour revenir audit premier canal de télévision à la fin de ladite inter-

ruption dans le cas où ledits moyen de sélection (30, 32) ont fourni un message publicitaire du deuxième canal durant l'interruption.

10. Système suivant l'une des revendications précédentes, comprenant en plus des moyens (30) pour attribuer une priorité aux caractéristiques démographiques de plusieurs téléspectateurs qui regardent ensemble un poste de télévision, dans lequel ledits moyens (30, 36) pour identifier l'autorisation desdits moyens de réception (10) est en réponse auxdits moyens (30) d'attribution de priorité pour fournir un message publicitaire basé sur ladite attribution de priorité.

11. Système suivant l'une des revendications précédentes, comprenant en plus des moyens (30, 36) pour emmagasiner des données, qui sont des indicateurs de messages publicitaires, fournies par ledits moyens de sélection (30, 32) pour une récupération et une analyse qui suivent par ladite station de tête.

12. Système suivant la revendication 1, dans lequel ladite station de tête transmet ledits signaux de télévision sur un réseau de distribution par câble, une bibliothèque d'émissions publicitaires enregistrées de télévision est prévue pour une reproduction commandée par un système de commande, ladite station de tête transmet concurrentement, sur des canaux de télévision séparés sur ledit réseau de distribution par câble, plusieurs émissions publicitaires différentes de télévision reproduites sous commande dudit système de commande durant une interruption périodique de messages publicitaires.

13. Système suivant la revendication 12, dans lequel ledits moyens (30, 36) d'identification comprennent des moyens (36) pour emmagasiner des données indicatrices de caractéristiques démographiques d'un abonné de télévision par câble ou satellite et ledits moyens de sélection (30, 32) comprennent des moyens en réponse des données emmagasinées dans ledits moyens d'emmagasinement (36), pour ordonner à un appareil d'abonné qui sert audit abonné de syntoniser sur un canal désigné durant une interruption périodique de messages publicitaires pour recevoir une émission publicitaire de télévision visant ledit abonné.

14. Système suivant les revendications 12 ou 13, comprenant en plus des moyens (30, 36) pour enregistrer des données indicatrices d'émissions publicitaires transmises sur ledit réseau de distribution par câble à partir de ladite bibliothèque, et des moyens pour facturer des annonces basés sur lesdites données.

15. Appareil d'abonné à utiliser dans la réception de services de télévision par câble ou satellite, comprenant :

des moyens de réception (10) de signaux de télévision qui contiennent un premier canal de télévision comprenant des programmes de télévision avec des interruptions périodiques de messages publicitaires et au moins un deuxième canal de télévision supplémentaire comprenant des messages publicitaires, des moyens de syntonisation (18) compris dans ledits moyens de réception (10) pour fournir un canal sélectionné afin de le visualiser, des moyens (30, 36) pour identifier l'autorisation desdits moyens de réception, des moyens (22, 30) pour déterminer quand une interruption de messages publicitaires se produira sur ledit premier canal de télévision, et des moyens de sélection (30, 32), en réponse desdits moyens de détermination (22, 30) et desdits moyens (30, 36) identifiant l'autorisation, pour actionner les moyens de syntonisation (18) afin de fournir un canal particulier de messages publicitaires pour une visualisation durant une interruption de messages publicitaires, caractérisé en ce que ledits moyens (30, 36) pour identifier l'autorisation desdits moyens de réception (10) comprennent des moyens (36, 40, 124, 126, 128, 130, 42) pour identifier au cas par cas des caractéristiques démographiques d'un téléspectateur, et en ce que ledits moyens (30, 36) pour identifier l'autorisation desdits moyens de réception (10) sont en réponse desdits moyens (36, 40, 124, 126, 128, 130, 42) pour identifier lesdites caractéristiques démographiques dudit téléspectateur pour fournir un message publicitaire particulier basé sur lesdites caractéristiques démographiques.

16. Appareil suivant la revendication 15, comprenant en plus des moyens (120, 124, 126, 128, 130, 42) pour permettre à un spectateur d'introduire des données démographiques auxdits moyens d'identification desdites données démographiques.

17. Appareil suivant la revendication 15 ou 16, comprenant en plus des moyens (22, 30) pour actionner ledits moyens de syntonisation (18) pour revenir audit premier canal de télévision à la fin d'une interruption de messages publicitaires.

18. Appareil suivant la revendication 17, dans lequel ledits moyens d'actionnement comprennent un compteur de temps (30) pour actionner le retour



audit premier canal de télévision à une période de temps prédéterminée après qu'une interruption de messages publicitaires ait commencé.

19. Appareil suivant l'une des revendications 15 à 18, comprenant en plus des moyens (30) pour attribuer une priorité aux caractéristiques démographiques de plusieurs téléspectateurs qui regardent ensemble un poste de télévision, dans lequel lesdits moyens (30, 36) pour identifier l'autorisation desdits moyens de réception (10) est en réponse auxdits moyens (30) d'attribution de priorité pour fournir un canal particulier de messages publicitaires basé sur ladite attribution de priorité.

20. Système ou appareil suivant l'une des revendications 1 à 19, caractérisé en ce qu'un appareil pour fournir des données de recherche de marché concernant des spectateurs et leur utilisation des services du câble et du satellite est prévu, qui comprend des moyens (120, 124, 126, 128, 130, 42) d'entrée de données permettant à un spectateur d'identifier des caractéristiques démographiques et de sélectionner des programmes de télévision à visualiser, un convertisseur (10) pour recevoir des signaux de télévision par câble ou satellite d'une station de tête, et en réponse auxdits moyens (120, 124, 126, 128, 130, 42) d'entrée de données pour fournir lesdits signaux à un poste de télévision d'un abonné pour les visualiser lors d'une entrée de données démographiques et de sélection de programme, des moyens (36) pour emmagasiner des données démographiques et de sélection de programme introduites dans lesdits moyens d'entrée de données, et des moyens (30) pour prélever les données emmagasinées et les transmettre à ladite station de tête.

21. Système suivant la revendication 20, comprenant en plus des moyens (30) pour joindre aux données emmagasinées des informations qui indiquent la date et le temps où les données ont été introduites dans lesdits moyens d'entrée de données.

22. Système suivant la revendication 20 ou 21, dans lequel lesdits moyens d'entrée de données comprennent une télécommande (120) pour faire fonctionner ledit convertisseur (10).

23. Système ou appareil de télévision par câble ou satellite suivant l'une des revendications précédentes, qui contient une télécommande (120) comprenant des commutateurs (132, 134) permettant à un utilisateur de commander différentes fonctions y compris la sélection de canal, caractérisé en ce que des moyens (124, 126, 128, 130) pour permettre à un utilisateur d'entrer des données démographiques

dans ledit convertisseur (10) sont prévus.

24. Système ou appareil suivant la revendication 23, dans lequel lesdits moyens pour permettre comprennent plusieurs commutateurs (124, 126, 128, 130) pour entrer des informations qui indiquent le sexe et l'âge de l'utilisateur.

25. Procédé pour émettre différents messages publicitaires à des téléspectateurs différents, comprenant les étapes :

de transmission des signaux de télévision qui contiennent un premier canal comprenant des programmes de télévision et des messages périodiques publicitaires et un deuxième canal comprenant des messages publicitaires alternatifs, d'identification d'autorisation de poste de télévision qui reçoivent lesdits signaux de télévision, de procuration sélective de messages publicitaires dudit premier ou deuxième canal dépendant de l'identification d'autorisation dudit ensemble de télévisions, caractérisé en ce que des caractéristiques démographiques d'un spectateur sont identifiées au cas par cas, et en ce que l'identification d'autorisation dudit poste de télévision est en réponse desdites caractéristiques démographiques identifiées dudit spectateur pour fournir un message publicitaire particulier basé sur lesdites caractéristiques démographiques.

26. Procédé suivant la revendication 25, comprenant les étapes supplémentaires :

de syntonisation vers ledit premier canal pour permettre la visualisation desdits programmes de télévision, de syntonisation vers ledit deuxième canal durant une interruption d'émissions publicitaires sur ledit premier canal dans le cas où des messages publicitaires du deuxième canal doivent être fournis, et de syntonisation vers ledit premier canal à la fin de ladite interruption d'émissions publicitaires.

27. Procédé suivant la revendication 25 ou 26, dans lequel plusieurs canaux qui contiennent des messages publicitaires alternatifs sont transmis, et des messages publicitaires sont fournis de façon sélective par ledit premier, deuxième ou un canal alternatif dépendant des caractéristiques démographiques identifiées.

28. Procédé suivant l'une des revendications 25 à 27,

dans lequel l'identification desdites caractéristiques démographiques dudit spectateur comprend l'étape de réception des données démographiques du spectateur.

29. Procédé suivant l'une des revendications 25 à 28, comprenant l'étape supplémentaire d'attribution de priorité des caractéristiques démographiques de plusieurs téléspectateurs qui regardent ensemble un poste de télévision, dans lequel la procuration de messages publicitaires est basée sur ladite attribution de priorité.

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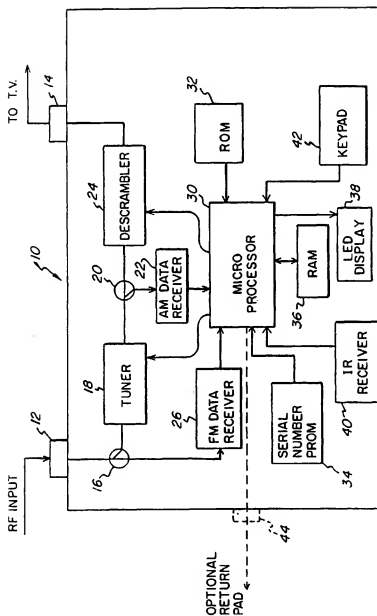


FIG. 1

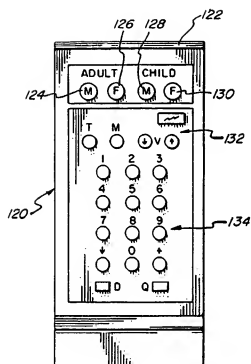
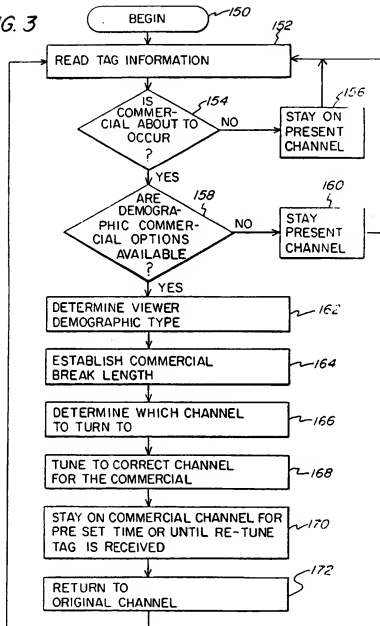


FIG. 2

FIG. 3



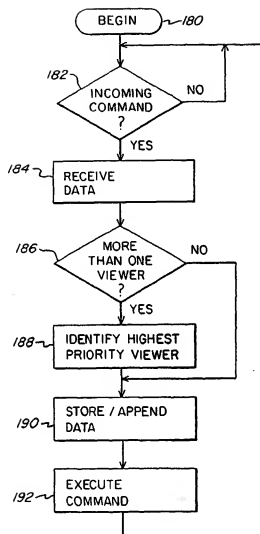
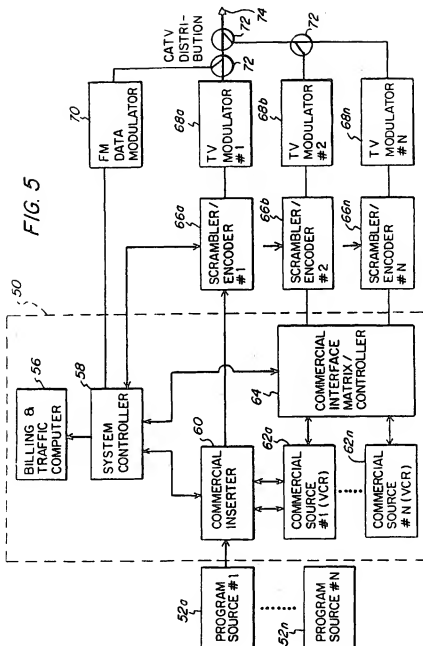


FIG. 4



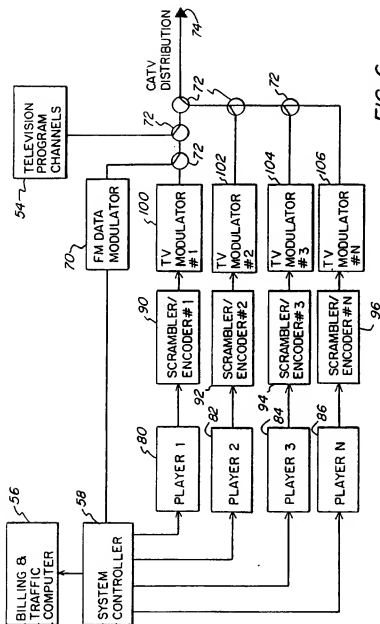


FIG. 6



